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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

9006060B

90-TFPO-011

NOV 16 1990

President
Westinghouse Hanford Company
Richland, Washington

Dear Sir:

WASTE STORAGE TANK CORE SAMPLING

This letter serves to document the Department of Energy (DOE) Richland Operations Office's understanding of Westinghouse Hanford Company (WHC) actions to ensure safe waste storage tank core sampling (Reference, CCMail: William H. Hamilton, Jr., 10/4/90, 9:33 a.m.). WHC has committed to the following:

1. A readiness review will be completed before core sampling commences. The readiness review will address (but not be limited to) the following:

   - Adequacy of the safety envelope for core sampling.

   - Adequacy of the WHC procedures for core sampling.

2. Ensure that appropriate DOE approval(s) are identified in schedules and that the approval packages/processes contain all necessary information on which to base the requested approval.

Please provide by November 28, 1990, the WHC plan(s) for ensuring readiness for core sampling. I am particularly interested in the WHC plan to core sample tanks associated with TPA milestone M-10-04.

Sincerely,

for Ronald E. Gerton, Project Manager
Tank Farm Project Office

TFPO:MJA

cc: W. G. Ruff, WHC
W. F. Hamilton, WHC
R. E. Raymond, WHC
T. B. Venziano, WHC
R. D. Wojtasek, WHC
V. W. Hall, WHC

DOE F 1325.8
(8-89)

United States Government **Department of Energy**

Memorandum

DATE: Novembet 16, 1990

REPLY TO ATTN OF: EM-35 (J. Tseng, FTS 427-1734)

SUBJECT: Sampling of Tank 101-SY

TO: Manager, Richland Operations Office

The attached Action Memorandum authorizes collection of crust samples from three level detectors in Tank 101-SY. Approval to proceed with the sample collection efforts is subject to the satisfactory completion of the operational readiness reviews being conducted by the Department and by Westinghouse Hanford Company (WHC).

As discussed with your staff, sample collection needs to be conducted with high assurance of ventilation flow in Tank 101-SY. To that end, the emergency diesel generator should be operating and ready to support the back-up exhauster, if needed.

The most significant hazard associated with these sample collection efforts is the radiation exposure to the workers. Please ensure that necessary precautions are taken to keep radiation exposures to as low as reasonable level and to minimize potential for spread of contamination.

Upgrading of Tank 101-SY instrumentation and data recording systems should be performed as soon as possible to improve monitoring of the tank and to collect data to allow better understanding of tank conditions. I know your organization is developing a program plan to address the hydrogen issue. I believe that certain actions can be performed in this window in addition to collecting the crust samples from the three level detectors. For example, given the trouble we have had with the level detection and the fact that crust level is a primary indicator of upcoming venting, I would like you to consider installing better level detection instrumentation in the tank during this window. Installation of digital pressure sensor alarm/recorder and other modifications outside of the tank should be done as soon as possible prior to the next venting. My staff will work with yours to determine the necessary safety and environmental documentation required to support these activities.

Please continue to keep John Tseng of my staff informed of the status of activities associated with Tank 101-SY.

Leo P. Duffy
Director
Office of Environmental Restoration
and Waste Management

Attachment

DOE F 1325.28
(10-89)

United States Government **Department of Energy**

Memorandum

ES - _____

Date: November 16, 1990 **SECRETARIAL ACTION REQUESTED BY:**

Orig. Office: EM-35 (J. Tseng, 301-427-1734)

Transmittal: ACTION: Sample Collection from Hanford Tank 101-SY

To: Under Secretary 11.16.90

Issue: Authorization to remove three level detectors from Tank 101-SY that contain crust materials for laboratory analysis.

Discussion: Potential flammable gas combustion and the potential for nitrate and organic reactions in the crust of Tank 101-SY have been identified as an unreviewed safety question.

Tank 101-SY last vented on October 24, 1990. Samples of Tank 101-SY material, especially the crust, are needed to evaluate potential corrective actions as well as better characterize the risks. The core sample rig planned for obtaining tank samples is still being evaluated for safety issues and, therefore, is not available at this time. We have been working with the Richland Operations Office and its management and operating contractor, the Westinghouse Hanford Company (WHC), to identify less intrusive methods to collect crust samples from Tank 101-SY that will provide a better understanding of the potential for secondary reactions. Three less intrusive methods have been identified: (1) collecting crust accumulation from the manual level probe; (2) the automatic level (FIC) probe; and (3) from a sludge weight.

These limited samples will not give us representative information about the composition of the entire crust; however, they will provide an indication of crust chemistry and, in conjunction with laboratory studies with simulated waste, they will provide an important step in understanding the possibility for secondary crust reactions. This data would assist WHC staff in revising the safety evaluation for core sampling also.

In the past, replacement of these level detectors would be considered routine maintenance, and replacement work has been performed on other Hanford high-level waste tanks. Given that additional restrictions are being imposed because of an unreviewed safety question, a safety analysis has been prepared to evaluate the potential safety concerns and to understand how to eliminate or reduce them.

My staff is working also with the Richland Operations Office to ensure that procedures are adequate and available, and that operators are trained and ready to employ these procedures. Both DOE and WHC are conducting operational readiness reviews as part of the approval process before conducting these sample collection activities. Planned laboratory analysis and readiness of the laboratories to perform the

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RE Gerton/DOE-RL	President/WHC	Incoming: 9006060B

Subject Waste Storage Tank Core Sampling

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